REMARKS

The Office Action dated March 25, 2009 has been reviewed and carefully considered. Claims 11 and 12, previously withdrawn as claims to a non-elected invention, are canceled without prejudice. Claim 17 is canceled without prejudice, and its subject matter is incorporated into claims 1 and 20. Claims 21-27 are added. Claims 21 and 23-27 are drawn to the elected invention, and claim 22 is generic. Claims 1-10, 13-16 and 18-20 are amended for clarity to more particularly point out what the Applicant regards to be the invention. Reconsideration of the application, as amended and in view of the following remarks, is respectfully requested.

Restriction Requirement

Claims 9-12 were withdrawn due to a restriction requirement, which was traversed and is invalid.

Item 1 of the 04/29/08 Office Action makes the restriction requirement, but does not seem to use a standard form paragraph from the MPEP.

What the 04/29/08 Office Action uses is similar to form paragraph 8.01, but deletes the sentence: "[t]he species are independent or distinct because [2]." The MPEP advises filling in the form to, "[i]n bracket 2, explain why the inventions are independent or distinct."

The 04/29/08 Office Action fails to state why it deems the inventions to be "independent or distinct." Instead, the 04/29/08 Office Action refers to criteria used in examining international patent applications rather than criteria used by the United States Patent and Trademark Office, in accordance with the MPEP, in examining United States

patent applications. Unity of invention is not the appropriate standard to be used in making restriction requirements in examining the instant patent application. See MPEP § 801.

The 04/29/08 Office Action further fails to state why there would be a serious burden if restriction is not required. "For purposes of the initial requirement, a serious burden on the examiner may be *prima facie* shown by appropriate explanation of separate classification, or separate status in the art, or a different field of search as defined in MPEP § 808.02." MPEP § 803(II). The 04/29/08 Office Action fails to make a *prima facie* showing of serious burden. S3 through S10 of both the 03/25/09 and 04/29/08 searches are directed to an electrical insulating material in liquid form for preventing flashover; accordingly, it is unclear why, based on the above criteria, a serious burden beyond the Examiner's effort to date would be involved.

Both showings, i.e., on what basis the Examiner finds "independent or distinct" inventions and on what basis the Examiner finds serious burden, are required for a "proper restriction" (MPEP § 803(I)); yet, the 04/29/08 Office Action makes neither showing.

No subsequent Office Action addresses, or compensates for, the lack of these two showings.

Reconsideration and withdrawal of the restriction requirement is respectfully requested.

Amendment of the Specification

The paragraph in the specification on page 9, lines 1-6, is amended as follows:

--This is to be considered for example when a high voltage generator has a hybrid insulation in which there are in a solid insulating material channels into which a liquid insulating material is fed in order for example to be able to better dissipate the heat from particularly highly thermally loaded areas than is possible with the solid insulating material. A high voltage generator with such hybrid insulation is disclosed in EP 1 176 856, (also published as US 6,498,303), ~~to~~ which is fully incorporated by reference herein~~should be made as part of the present disclosure~~.--

37 CFR 1.57(g) provides:

(g) An incorporation of material by reference that does not comply with paragraphs (b), (c), or (d) of this section is not effective to incorporate such material unless corrected within any time period set by the Office, but in no case later than the close of prosecution as defined by § 1.114(b), or abandonment of the application, whichever occurs earlier. In addition:
(1) A correction to comply with paragraph (b)(1) of this section is permitted only if the application as filed clearly conveys an intent to incorporate the material by reference. A mere reference to material does not convey an intent to incorporate the material by reference.
(Underlining has been added for emphasis.)

Support for the amendment of the specification is found in 37 CFR 1.57(g)(1), at least because the above-recited paragraph in the specification clearly conveys an intent to incorporate the material by reference.

Claim Rejections

Item 3 of the Office Action rejects claim 7 and 8, under 35 USC §112, second paragraph, of claim 7 and 8, based on "lacking antecedent basis."

The Office Action mailed 10/30/08 suggests "insufficient antecedent basis . . . in the claim." The 10/30/08 Office Action suggests substituting the term "foam material" for "basic substance."

As the reply to the 10/30/08 Office Action states, the term "the basic substance" in claim 8 finds antecedent basis in claim 8. Specifically, the antecedent basis is "basic substance."

As to claim 7, it recites "a basic substance." It does not recite "the basic substance." Accordingly, it is unclear why antecedent basis would be needed or what would then constitute antecedent basis. If the Office Action is asserting lack of antecedent basis in the disclosure, reference is made to "basic substance" at line 20 of page 4 in the specification.

The rejection accordingly lacks validity.

Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 1, 16, 18 and 19 stand rejected under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 4,109,098 to Olsson et al. ("Olsson").

Claim 1, as amended, recites, "An electrical insulating material comprising: . . . , said insulating material having a specific resistance greater than 10^{10} Ωcm and less than 10^{12} Ωcm."

Support for the amendment of claim 1 is found in the specification (e.g., page 6, lines 21-24).

Claim 17, now canceled, with its subject matter incorporated into claim 1, stated, ". . . said first material with said second material distributed therein constituting a composite material having a specific resistance in the range 10^{10} Ωcm to 10^{12} Ωcm."

As the outstanding Office Action (hereinafter "Office Action") acknowledges in item 18, ". . . Olsson does not teach a composite material with the specific resistance value as required by Claim 17."

For at least the above reasons, Olsson fails to anticipate the present invention as recited in claim 1.

Reconsideration and withdrawal of the rejection is respectfully requested.

Also, the Office Action incorrectly suggests in item 18 that it would have been obvious to implement Olsson with a specific resistance within the claimed range.

The Office Action bases this assumption on a statement by the Federal Circuit, in *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985), regarding design choices that are all advantageous for similar reasons.

In *Titanium Metals*, a metal alloy is claimed which has constituents in particular percentages, and, "to give the alloy certain desirable properties, particularly corrosion resistance in hot brine solutions, while retaining workability so that articles such as tubing can be fabricated from it by rolling, welding and other techniques." Id. at 775. The particular percentages are accordingly chosen to be advantageous. The claim reads on an allegedly infringing metal alloy having constituents and constituent percentages. These two, i.e., "constituents" and "constituent percentages," are both sufficiently close, id. at paragraph 57: "very close," to the claimed constituents and constituent percentages respectively, that the allegedly infringing embodiment would have been expected to exhibit the same advantageous properties. The allegedly infringing embodiment was

found by the Federal Circuit to be obvious, because the mutual advantages of either implementation would have made either a matter of design choice.

In this regard too, Applicant notes what the Office Action interprets as "closeness" of the presently claimed range to that of Olsson bears scrutiny.

The Office Action cites to Olsson outer semiconducting layer 4, having a sheet resistivity (col. 3, line 4: "sheet resistivity") of 10^7 to 10^9 ohms/square (col. 3, lines 8-9), for its advantages (col. 3, lines 9-10: "advantages"). Sheet resistivity is converted to specific resistance according to the following formula: specific resistance (Ωcm) = sheet resistivity (ohms/square (which is in units of ohms)) x thickness (cm). Applicant believes a typical thickness for a PVC jacket 7 (Olsson, col. 3, lines 57-59) of a high voltage cable (which would be greater than that for a medium voltage cable) is 110 or 140 mils (as shown in the *Rome Cable Corporation* reference in the accompanying Information Disclosure Statement). From Olsson FIG. 1, it appears that layer 4 is about one tenth the thickness of layer 7; but, let us say, conservatively, that it is as much as one half the thickness, i.e., between 55 and 70 mils. Using the conversion formula 0.0254 mm per mil, the layer 4 thickness is therefore between 1.4 mm and 1.8 mm or, equivalently, between 0.14 cm and 0.18 cm. Accordingly, even assuming the larger thickness, the Olsson 10^7 to 10^9 ohms/square range has an upper limit that seems very likely to be less than 1.8×10^8 Ωcm.

The maximum Olsson range upper limit of 1.8×10^8 Ωcm is therefore lower than the lower limit 10^{10} Ωcm of the claimed range by more than a factor of 50.

Such a disparity in magnitude between the claimed and prior art ranges stands in contrast to that of the *Titanium Metals* holding the Office Action cites, namely:

> Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.

According to the immediately-above discussion, the Olsson range is not close to the range claimed in the present claim 1.

Moreover, Olsson cautions against exceeding its 1.8 x 10^8 Ωcm upper limit, since "a higher voltage gradient near the screen edge is obtained which can cause glow or corona at the screen edge" (col. 4, lines 51-53). Accordingly, one skilled in the art would not have expected an embodiment having a specific resistance within the claimed range to have the same properties as an embodiment disclosed in Olsson.

Also, tor at least the above reasons, implementation within the presently claimed range is not simply a matter of design choice as in *Titanium Metals*; in fact, by cautioning against exceeding the upper limit, Olsson teaches away from any such implementation.

Furthermore, claim 1 recites, ". . . to thereby increase electrical **conductivity** for, by dissipation of charge, preventing voltage flashover. . ."

Olsson, by contrast, increases electrical **resistance** (col. 4, lines 44-47), e.g., by lessening the amount of added carbon black (col. 3, lines 14-17), for preventing voltage flashover.

For this reason too, it would not have been obvious to modify Olsson in the manner the Office Action suggests.

For at least the foregoing reasons, the Office Action fails to make a *prima facie* case of obviousness, and Olsson fails to render obvious the present invention as recited in claim 1.

Claims 16 and 18 depend from, and include all the limitations of, base claim 1, and are likewise deemed patentable over Olsson for at least the above-stated reasons.

The amendment of claim 19 finds support in the specification, e.g., page 3, lines 3-7; page 6, lines 21-24.

Claim 19 depends from, and includes all the limitations of, base claim 1, and is likewise deemed patentable over Olsson.

Claims 1-4, 6, 16 and 18-20 stand rejected under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 5,756,936 to Viebranz et al. ("Viebranz").

As mentioned above, claim 17, now canceled, with its subject matter incorporated into claim 1, stated, ". . . said first material with said second material distributed therein constituting a composite material having a specific resistance in the range 10^{10} Ωcm to 10^{12} Ωcm."

As item 19 of the Office Action acknowledges, "Viebranz does not teach a composite material with the specific resistance value as required by Claim 17.

Viebranz, thus, does not anticipate the present claim 1.

Viebranz discloses a number of examples of an inner layer 14. In one of the examples, the layer 14 has a specific resistance of at least $6x10^{13}$ Ωcm, and, in all other examples the specific resistance is higher (col. 6, lines 16-19(20), 46, 53). Even the

lowest specific resistance disclosed in Viebranz, $6x10^{13}$ Ωcm, exceeds the upper limit of the claimed range of the present claim 1 by a factor of 60.

For at least the above reasons, Viebranz fails to anticipate the invention as recited in claim 1.

Item 19 of the Office Action does, however, incorrectly suggest that the claimed range would have been obvious based on *Titanium Metals*, discussed above.

Viebranz is devoted to AC field control. See (col. 3, lines 8-16(17); col. 5, lines 38-42: "field equalizing effect"; col. 6, line 57 to col. 7, line 4; col. 8, lines 17-27). The conductive spheres or spheres with conductive coating are added to a dielectric for field controlling purposes (col. 2, lines 30(31)-33(34)). Accordingly, in Viebranz, "significant current does not flow" through the inner layer 14 (col. 4, line 26).

Moreover, because Viebranz is devoted to AC field control, Viebranz does not express any inkling for implementing the layer 14 for significant current flow (col. 4, line 26).

In fact, Viebranz states "[t]he metallic coating can be as thin as practical since significant current does not flow" (col. 4, lines 25-26), and touts making the metallic coating as thin as possible, to increase dielectric strength of the layer 14 (col. 8, lines 13-16; col. 3, lines 8(9)-11(12)), therefore teaching away from any implementation affording significant current flow. Viebranz accordingly teaches away from increasing electrical conductivity for charge dissipation for preventing voltage flashover

By contrast, the present claim 1 recites, "a second material distributed within the first material to thereby increase electrical conductivity for, by dissipation of charge, preventing voltage flashover. . ."

The Office Action, by citing to *Titanium Metals*, suggests that one of ordinary skill in the art would have expected Viebranz to have the "same" beneficial AC "field controlling effect" (col. 3, line 15) if layer 14 were to have been modified for a specific resistance within the range of the present claim 1.

However, one skilled in the art would not have expected a layer 14 with a specific resistance in the claimed range to have the same effect as if it had a specific resistance mentioned in Viebranz. For example, attempting to achieve the claimed range by increasing the thickness of the aluminum coating would have caused the layer 14 to have less dielectric strength (col. 8, lines 13-16; col. 3, lines 8(9)-11(12)) .

The citation to *Titanium Metals* further fails to have relevance here, at least because the Viebranz examples entail specific resistance of considerably greater magnitudes (col. 6, lines 18, 46 and 53). They are within a factor of 10 of each other; yet, the smallest of them exceeds the upper limit of the claimed range by a factor of 60.

Such a disparity in magnitude between the claimed and prior art ranges stands in contrast to that of the *Titanium Metals* holding the Office Action cites, namely:

> Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.

The factor of at least 60 above the claimed range implies that the claimed range and the prior art range are not close to each other.

Furthermore, since, as discussed above, Viebranz teaches away from increasing the thickness of the aluminum coating, it would not have been obvious to increase the thickness in an effort to lower any of the Viebranz specific resistances into the claimed range, even if such were possible. On the other hand, increasing the volume fraction of aluminum coated bubbles would have failed to achieve the present claimed range, as evidenced by the above-noted example where specific resistance remained constant (col. 6, line 17: "constant").

As set forth above, Viebranz teaches away from the present claim 1, and fails to disclose or suggest "a second material distributed within the first material to thereby increase electrical conductivity for, by dissipation of charge, preventing voltage flashover. . ."

For at least all of the above reasons, the Office Action citation here to *Titanium Metals* fails to make a *prima facie* case of obviousness.

According to the above discussion, there would not have existed reason or motivation for modifying Viebranz "to . . . increase electrical conductivity for, by dissipation of charge, preventing voltage flashover, said insulating material having a specific resistance greater than 10^{10} Ωcm and less than 10^{12} Ωcm" as in the present claim 1.

For at least all of the foregoing reasons the invention as recited in claim 1 distinguishes patentably over Viebranz.

The amendment of claim 2 finds support in the specification, (e.g., page 6, lines 13-24).

Claims 2-4, 6, 16, 18 and 19 depend from, and include all the limitations of, base claim 1, and are likewise deemed to distinguish patentably over Viebranz.

Claim 20 similarly recites, ". . . forming a composite electrical insulating material by distributing within a first material a second material to thereby increase electrical conductivity for, by dissipation of charge, preventing said voltage flashover, said composite insulating material having a specific resistance greater than 10^{10} Ωcm and less than 10^{12} Ωcm."

At least for the reasons set forth above with respect to claim 1, claim 20 is likewise deemed to be patentable over Viebranz.

Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 1 and 13-20 stand rejected under 35 U.S.C. 102(b) as anticipated by, or, in the alternative, under 35 U.S.C. 103(a), obvious over European Patent Application No. EP 1176856 or, equivalently U.S. Patent 6,498,303, to Negle (hereinafter, the '303 patent).

Claim 1 recites, "a second material distributed within the first material to thereby increase electrical conductivity. . ."

The Advisory Action (AA) of 12/30/08 suggests that the first material is foam and the second material is gas introduced into the foam to create bubbles ('303 patent, col. 4, lines 25-26).

Item 13 of the present Office Action mistakenly suggests that the claim 1 language "to thereby increase electrical conductivity" is met in the '303 patent based on its unsupported, generalized theory that lowering dielectric constant raises electrical conductivity.

As evidence that this "generalized theory" is unsupported is the fact that the Office Action does not offer any support, e.g., citation to a reference or other authority, for the assertion.

If any support, in the way of a citation to authority or some reference, can be furnished to back up this generalized theory, Applicant would be very interested in knowing of it.

A counterexample to this unsupported, generalized theory of the Office Action is provided in Viebranz. In Viebranz, as the volume percentage of glass bubbles is increased above 2%, the specific resistance remains constant (col. 5, lines 56-58; col. 6, lines 16-18), as the dielectric constant increases (col. 6, lines 21-23). In fact, the specific resistance remains constant through a dielectric constant increase of at least about 30% (col. 5, lines 56-58; col. 6, lines 16-18, 21-23).

Perhaps the Examiner has compared a table of dielectric constants for homogeneous substances to a table of specific resistance and found a relationship for some substance under some test conditions.

Applicant is unable to imagine how a well-reasoned, generalized theory could be hypothesized from such a comparison, even for homogeneous substances, much less the foam described in the '303 patent.

As Applicant explained in the 01/30/09 response, lines 23-35 of column 4 of the '303 patent describe a foam production process in which the foam is heated and the gas-filled bubbles consequently expand. Expansion lowers the density of the foam and therefore lowers the dielectric constant of the foam.

The Office Action mistakenly concludes that lowering the dielectric constant of the '303 patent's foam during it production implies increase in electrical conductivity.

However, as Applicant stated in the 01/30/09 response, the specific resistance of the foam during this heating and resulting bubble expansion remains essentially unchanged.

For at least this reason, the '303 patent does not disclose or suggest "a second material distributed within the first material to thereby increase electrical conductivity. . ."

In addition, claim 1 recites, "said insulating material having a specific resistance greater than 10^{10} Ωcm and less than 10^{12} Ωcm."

Item 13 of the Office Action, in the paragraph spanning pages 4 and 5, suggests that "the prior art teaches similar components being used and processed in a similar manner and would inherently possess the claimed characteristics. . ."

Applicant traverses this statement by the Office Action.

By "the prior art" the Office Action presumably refers to the '303 patent, since this is the reference being applied in item 13.

Components are not "being used and processed in a similar manner."

For example, the '303 patent mentions bubbles which expand during heating (col. 4, lines 23-30).

As another example, the '303 patent does not disclose or suggest adding a filler to a foam to increase electrical conductivity and lower specific resistance.

In AC field control, the emphasis is on dielectric constant rather than specific resistance. See present application, page 7, lines 1-4.

In this context, Applicant notes that the '303 patent does not mention any specific resistance for the foam. The lack of any mention is unsurprising, because the discussion on the foam (col. 4, lines 23-42) relates to AC field control, rather than DC field control.

It is accordingly unclear to Applicant by what reasoning the Office Action makes its assertion that the foam in the '303 patent "inherently" comes with the specific resistance range of the present claim 1.

For this reason too, the '303 patent does not disclose or suggest the invention as recited in the present claim 1.

Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 13, 15-16, 18 and 19 depend from, and include all the limitations of, base claim 1, and are therefore also deemed to distinguish patentably over the '303 patent.

Claim 20 is a process claim analogous to the manufacture claim 1, and is likewise deemed to be patentable over the '303 patent.

Claim 14 is amended to depend from claim 20. The amendment finds support in the specification (e.g., page 3, lines 12-20).

Dependent claim 14, at least due to its dependency from base claim 20, is deemed patentable over the '303 patent.

Claims 1, 13, 14, 16, 17, 19 and 20 stand rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, obvious over, U.S. Patent No. 4,219,791 to Moore et al. ("Moore").

As mentioned above, claim 17 is now canceled and its subject matter is in claim 1.

This subject matter which claim 1 recites is, ". . . said insulating material having a specific resistance greater than 10^{10} Ωcm and less than 10^{12} Ωcm."

Item 14 of the Office Action firstly refers to the 10/30/08 Office Action, but not to address claim 17 specifically. Claim 17 did not yet exist on 10/30/08.

To specifically address claim 17, item 14 states, "the Examiner respectfully submits that the prior art would inherently meet the claimed limitations. Specifically, the prior art teaches similar components being used and processed in a similar manner and inherently possess the claimed characteristics as required by Claims . . . 17. . ."

Moore is directed to field control with respect to AC (col. 1, line 11: "A.C.") voltage loading so as to shift the dielectric stress (col. 1, line 12:"dielectric stress") from the insulator of higher dielectric constant to the adjacent insulator of lower dielectric constant (col. 1, lines 11-25).

In AC field control, the emphasis is on dielectric constant rather than specific resistance.

Moore, which is directed to AC field control, apparently does not mention specific resistance.

However, as first described above, in these remarks, in connection with the claim rejections based on the '303 patent, the Office Action is using its unsupported, generalized theory as an erroneous tool by which to derive specific resistance based on dielectric constant.

In the last sentence of item 14, the Office Action again applies this erroneous tool.

The implied conclusion of the Office Action, that Moore "inherently" discloses ". . . said insulating material having a specific resistance greater than 10^{10} Ωcm and less than 10^{12} Ωcm" is accordingly invalid and without foundation.

In addition, claim 1 recites, "a second material distributed within the first material to thereby increase electrical conductivity."

At the top of page 6, item 14 of the Office Action states that Moore "does not specifically recite the addition of a second material which increase the electrical conductivity of the composite."

The Office Action then says that, however, adding the second material to increase electrical conductivity would have been obvious, since Moore is about optimizing the dielectric constant parameter.

Viebranz, however, like Moore, adds glass microspheres to a polymer. The Viebranz microspheres, in the example cited earlier in these remarks, are even coated, albeit thinly (col. 4, lines 25-26; col. 6, line 16), with aluminum (col. 6, line 13: "aluminum"), a good conductor.

Yet, as mentioned above in connection with that example, as the volume fraction of microspheres is increased above 2%, the specific resistance remains constant.

It is unclear to Applicant on what basis it could properly be suggested that it would have been obvious, based on Moore, to create an embodiment featuring "a second material distributed within the first material to thereby increase electrical conductivity."

Furthermore, Moore fails to disclose or suggest dissipation of charge or voltage flashover.

Applicant believes the Office Action falls short of explaining how it reasonably could be concluded that an embodiment featuring "a second material distributed within the first material to thereby increase electrical conductivity for, by dissipation of charge, preventing voltage flashover" would have been obvious based on Moore.

For at least all of the foregoing reasons, Moore fails to anticipate and fails to render obvious the present invention as recited in claim 1.

Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 13, 16, 18 and 19 depend from, and include all the limitations of, the base claim 1, and are likewise patentable over Moore.

Claim 20 is a process claim analogous to the manufacture claim 1, and is likewise deemed to be patentable over Moore.

Claim 14 is also deemed to be patentable at least due to its dependency from base claim 20.

Claims 2-4 stand rejected under 35 U.S.C. 103(a) as unpatentable over Moore in view of U.S. Patent No. 6,541,534 to Allen et al. ("Allen").

Claims 2-4 depend from the present claim 1.

Allen fails to compensate for the shortcomings of Moore.

For example, Allen fails to disclose or suggest, ". . . said insulating material having a specific resistance greater than 10^{10} Ωcm and less than 10^{12} Ωcm," which language explicitly appears in claim 1.

Allen is directed to rigid polyurethane foams with glass or polymeric microspheres. The foams are used for mechanical reinforcement. See col. 1, lines 8-16(17); and col. 12, lines 44-57. Applicant is unable to find any reference to or hint of an electrical application in Allen.

Thus, as another example, it is unclear how Allen could provide motivation or reason for modifying Moore to overcome its above-discussed failure to feature "a second material distributed within the first material to thereby increase electrical conductivity."

For at least the foregoing reasons, Moore in view of Allen fails to render obvious the present invention as recited in claims 2-4.

Reconsideration and withdrawal of the rejection is respectfully requested.

Claim 5 stands rejected under 35 U.S.C. 103(a) as unpatentable over Viebranz in view of U.S. Patent No. 3,670,091 to Franz et al. ("Franz").

Claim 5 depends from claim 1.

Frantz relates to the use of a somewhat flexible matrix, with gas-filled hollow phenolic or glass spheres dispersed throughout, for the relief of mechanical stresses on electrical components. See col. 1, lines 47-62. The flexible matrix does not appear to be used to either insulate or conduct electricity.

Franz accordingly fails to compensate for the deficiencies of Viebranz, at least because Franz fails to provide reason or motivation for modifying Viebranz to overcome the above-noted deficiencies of Viebranz.

In this regard, Franz fails to disclose or suggest, for example, ". . . said insulating material having a specific resistance greater than 10^{10} Ωcm and less than 10^{12} Ωcm" which language explicitly appears in the present claim 1.

Viebranz in view of Franz accordingly fails to render obvious the present invention as recited in claim 5.

Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 7 and 8 stand rejected under 35 U.S.C. 103(a) as unpatentable over Viebranz in view of Allen.

Claims 7 and 8 depend from claim 1.

As mentioned above, Allen is directed to rigid polyurethane foams with glass or polymeric microspheres. The foams are used for mechanical reinforcement. See col. 1, lines 8-16(17); and col. 12, lines 44-57. Applicant is unable to find any reference to or hint of an electrical application in Allen.

Allen fails to compensate for the deficiencies of Viebranz.

For example, Allen fails to disclose or suggest, ". . . said insulating material having a specific resistance greater than 10^{10} Ωcm and less than 10^{12} Ωcm," which language explicitly appears in the present claim 1.

Allen also fails to make up for the other Viebranz deficiencies noted above.

Viebranz in view of Allen accordingly fails to render obvious the present invention as recited in claim 5.

Reconsideration and withdrawal of the rejection is respectfully requested.

New Claims

Dependent claim 21 finds support in the specification, (e.g., page 4, lines 22-23; page 6, lines 13-16; and original claim 2).

Dependent claim 22 finds support at least in original claim 6.

Independent claim 23 finds support in the specification, (e.g., page 2, lines 3-12, 21-24; page 3, lines 3-11; page 9, lines 1-6; and, in U.S. Patent No. 6,498,303 to Negle, which is incorporated by reference herein, the last sentence of the abstract, lines 1-21 of column 3, lines 23-43 of column 4, and the figure).

As to claim 23, the above remarks show that claim 23 distinguishes over the prior art of record.

In particular, the '303 patent discloses a voltage generator, but the '303 patent does not disclose or suggest, ". . . to thereby increase electrical conductivity for, by dissipating charge, preventing voltage flashover. . ."

Moore relates to an electrical inductive apparatus, but does not disclose or suggest, ". . . to thereby increase electrical conductivity for, by dissipating charge, preventing voltage flashover. . ."

Viebranz and Olsson both relate to AC (alternating-current) power cables, rather than to a voltage generator, and neither Viebranz nor Olsson discloses or suggests, ". . . to

thereby increase electrical conductivity for, by dissipating charge, preventing voltage flashover. . ."

In particular, the references of record, alone or in combination, fail to anticipate or render obvious the present invention as recited in claim 23.

Dependent claims 24 and 26, and independent claim 25, find support in the specification (e.g., page 6, lines 13-20).

Claim 25 recites, ". . . an electrical insulating foam. . ."

The Office Action incorrectly indicates, by its choice of references for rejecting claim 16, which recites a foam, that Viebranz and Olsson disclose or suggest a foam.

Item 12 of the Office Action points out lines 57-63 of column 3 of Viebranz, but no disclosure or suggestion of a foam is to be found in that Viebranz passage.

Viebranz discloses a polymer matrix having a dielectric constant ≥ 3 (lines 50 to 63 of column 3), but this does not imply a foam.

Foam is typically lightweight at the expense of dielectric strength.

Viebranz, by contrast, relates to increasing the dielectric strength of the inner layer 14 (col. 3, lines 8(9)-16(17)).

It, accordingly, would not have been obvious to make the Viebranz inner layer 14 a foam.

Item 11 of the Office Action, by including claim 16 among those claims it rejects, presumably suggests, implicitly, that Olsson somehow discloses or suggests its outer semiconducting layer 4 implemented as a foam.

The Office Action fails to elaborate on this.

The layer 4 may, for example, be polyethylene into which carbon is introduced (col. 2, lines 60-62); however, Applicant cannot find any disclosure or suggestion in Olsson that the polyethylene is polyethylene foam. Nor does there appear to be any reason or motivation for making the layer 4 a foam.

Moore discloses a foam, but fails to disclose or suggest, ". . . a material distributed within said foam to thereby increase electrical conductivity for, by dissipation of charge, preventing voltage flashover.

The '303 patent discloses a foam, but, likewise, does not disclose ". . . a material distributed within said foam to thereby increase electrical conductivity for, by dissipation of charge, preventing voltage flashover.

The prior art of record, alone or in combination, fails to disclose or suggest the present invention as recited in claim 25.

Dependent claim 27 finds support in the specification (e.g., page 2, lines 3-12; page 9, lines 1-6; and, in U.S. Patent No. 6,498,303 to Negle, which is incorporated by reference herein, the last sentence of the abstract, lines 1-21 of column 3, lines 23-43 of column 4, and the figure).

CONCLUSION

In view of the above, it is respectfully submitted that the present application is in condition for allowance. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

One independent claim in excess of three is added. In addition, three claims in excess of twenty are added. Accordingly, a payment of the fee of $220.00 + (3 x $52) = $376.00 is included with submission of this reply.

The Director is hereby authorized to charge any fee which may be required, or credit any overpayment, to Deposit Account No. 50-3960.

Respectfully submitted,

Dated: April 22, 2009

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